Drafting and Design Program Standards

1. Personal Qualities and People Skills

Answer Options	Nice to Know	Need to Know	Critical to Know	Rating Average	Response Count
Demonstrate a positive work ethic by coming to work every day on time, a willingness to take direction, and motivation to accomplish the task at hand.	0	3	41	2.93	44
Demonstrate integrity by abiding by workplace policies and laws and demonstrating honesty and reliability.	1	4	39	2.86	44
Demonstrate teamwork skills by contributing to the success of the team, assisting others, and requesting help when needed.	2	14	28	2.59	44
Demonstrate positive self-representation skills by dressing appropriately and using language and manners suitable for the workplace.	1	13	30	2.66	44
Demonstrate diversity awareness by working well with all customers and co-workers.	6	16	22	2.36	44
Demonstrate conflict-resolution skills by negotiating diplomatic solutions to interpersonal and workplace issues.	4	19	21	2.39	44
Demonstrate creativity and resourcefulness by contributing new ideas and working with initiative.	5	19	20	2.34	44
				answered question	44
				skipped question	0

2. Professional Knowledge and Skills

Answer Options	Nice to Know	Need to Know	Critical to Know	Rating Average	Response Count
Demonstrate effective speaking and listening skills by communicating effectively with customers and employees and following directions.	1	13	30	2.66	44
Demonstrate effective reading and writing skills by reading and interpreting workplace documents and writing clearly.	2	16	26	2.55	44
Demonstrate critical-thinking and problem-solving skills by analyzing and resolving problems that arise in completing assigned tasks.	1	18	25	2.55	44
Demonstrate healthy behaviors and safety skills by following safety guidelines and managing personal health.	4	17	23	2.43	44
Demonstrate understanding of workplace organizations, systems, and climates by identifying "big picture" issues and fulfilling the mission of the workplace.	7	18	19	2.27	44
Demonstrate lifelong-learning skills by continually acquiring new industry-related information and improving professional skills.	5	17	22	2.39	44
Demonstrate job acquisition and advancement skills by preparing to apply for a job and seeking promotion.	8	22	13	2.12	43
Demonstrate time, task, and resource management skills by organizing and implementing a productive plan of work.	3	22	19	2.36	44
Demonstrate mathematical skills by using mathematical reasoning to accomplish tasks	3	20	21	2.41	44
Demonstrate customer service skills by identifying and addressing the needs of all customers and providing helpful, courteous, and knowledgeable service.	8	18	18	2.23	44
				answered question	44
				skipped question	0

3. Technology Knowledge and Skills					
Answer Options	Nice to Know	Need to Know	Critical to Know	Rating Average	Response Count
Demonstrate proficiency with job-specific technologies by selecting and safely using technological resources to accomplish work responsibilities in a productive manner.	4	15	25	2.48	44
Demonstrate proficiency with information technology by using computers, file management techniques, and software/programs effectively.	2	12	30	2.64	44
Demonstrate proper Internet use and security by using the Internet appropriately for work.	8	14	22	2.32	44
Demonstrate proficiency with telecommunications by selecting and using appropriate devices, services, and applications.	12	16	16	2.09	44
				answered question	44
				skipped question	0

	CONTENT STANDARD 1.0: CAREER EXPLORATION					
	Performance Standard 1.1: Careers in Drafting					
	Answer Options	Nice to Know	Need to Know	Critical to Know	Rating Average	Response Count
1.1.1.	Investigate careers in drafting, training, and associated opportunities.	8	24	11	2.07	43
1.1.2.	Describe the differences between drafting disciplines and job functions.	8	23	12	2.09	43
1.1.3.	Explore career opportunities and list educational requirements for a given drafting field.	9	19	15	2.14	43
1.1.4.	Identify safety risks and preventative measures in the office, at the construction site, and production site.	7	18	18	2.26	43
					answered question	43
					skipped question	1

	CONTENT STANDARD 2.0: DRAFTING FUNDAMENTALS					
	Performance Standard 2.1: Geometric Constructions					
	Answer Options	Nice to Know	Need to Know	Critical to Know	Rating Average	Response Count
2.1.1.	Define geometric terms and recognize various geometric shapes by name.	4	16	22	2.43	42
2.1.2.	Use lines, circles, and arcs to construct regular and irregular geometric shapes.	4	9	29	2.60	42
2.1.3.	Construct angles, to include acute, obtuse, and right angles.	3	13	26	2.55	42
2.1.4.	Divide lines and bisect angles and arcs.	3	15	24	2.50	42
2.1.5.	Construct tangent, concentric, and perpendicular geometric relationships.	3	11	28	2.60	42
2.1.6.	Calculate area, perimeter, and volume of geometric shapes to include circle, square, rectangle, and triangle.	1	12	29	2.67	42
					answered question	42
					skipped question	2

	Performance Standard 2.2: Measuring and Scaling Techniques					
	Answer Options	Nice to Know	Need to Know	Critical to Know	Rating Average	Response Count
2.2.1.	Explain the concept of scaling of objects.	0	12	30	2.71	42
2.2.2.	Determine appropriate engineering, architectural, and metric scales.	1	15	26	2.60	42
2.2.3.	Measure object size, area, and volume utilizing appropriate industry devices.	2	13	27	2.60	42
2.2.4.	Construct drawings utilizing metric and customary (i.e., SI, Imperial) measurement systems.	3	13	26	2.55	42
2.2.5.	Transcribe drawings accurately using ratios and proportions.	7	14	21	2.33	42
2.2.6.	Determine and apply the equivalence between fractions and decimals.	1	13	28	2.64	42
2.2.7.	Convert between customary (i.e., SI, Imperial) and metric systems.	9	14	19	2.24	42
					answered question	42
					skipped question	2

	Performance Standard 2.3: Conventional Drafting Practices					
	Answer Options	Nice to Know	Need to Know	Critical to Know	Rating Average	Response Count
2.3.1	Identify and select appropriate drafting media.	8	14	20	2.29	42
2.3.2.	Produce title blocks.	8	14	20	2.29	42
2.3.3.	Utilize appropriate drawing composition and layout.	2	15	25	2.55	42
2.3.4.	Identify and utilize industry standard object properties (i.e., line weight, line type).	4	13	25	2.50	42
2.3.5.	Produce drawings from sketches.	4	10	28	2.57	42
2.3.6.	Apply appropriate annotations to drawings according to industry standards.	2	15	25	2.55	42
2.3.7.	Demonstrate drawing revision control.	7	11	24	2.40	42
					answered question	42
					skipped question	2

	Performance Standard 2.4: Multi-View Drawings Using Orthographic Projection					
	Answer Options	Nice to Know	Need to Know	Critical to Know	Rating Average	Response Count
2.4.1.	Determine the principle view of an object.	5	14	23	2.43	42
2.4.2.	Identify, create, and arrange multi-view drawings..	6	8	28	2.52	42
2.4.3.	Identify, create, and arrange sectional views.	4	11	27	2.55	42
2.4.4.	Identify, create, and arrange primary auxiliary views.	7	12	23	2.38	42
2.4.5.	Identify multiple projection theories (first angle, third angle)	8	13	21	2.31	42
2.4.6.	Apply appropriate units of measurement.	2	10	30	2.67	42
					answered question	42
					skipped question	2

	Performance Standard 2.5: Dimensions and Annotations					
	Answer Options	Nice to Know	Need to Know	Critical to Know	Rating Average	Response Count
2.5.1.	Differentiate appropriate dimension standards.	5	14	23	2.43	42
2.5.2.	Arrange dimensions and annotations using appropriate standards.	1	15	26	2.60	42
2.5.3.	Use various dimensioning styles.	10	13	19	2.21	42
2.5.4.	Construct bill of materials or schedule of materials.	11	12	19	2.19	42
					answered question	42
					skipped question	2

	Performance Standard 2.6: Pictorial Drawings					
	Answer Options	Nice to Know	Need to Know	Critical to Know	Rating Average	Response Count
2.6.1.	Create oblique drawings.	15	13	14	1.98	42
2.6.2.	Create isometric drawings.	9	14	19	2.24	42
2.6.3.	Create perspective drawings.	20	9	13	1.83	42
					answered question	42
					skipped question	2

	Performance Standard 2.7: Hand Sketching Techniques					
	Answer Options	Nice to Know	Need to Know	Critical to Know	Rating Average	Response Count
2.7.1.	Develop design ideas using freehand sketching.	13	13	16	2.07	42
2.7.2.	Create pictorial and multi-view sketches.	13	13	16	2.07	42
2.7.3.	Utilize hand lettering techniques.	14	17	11	1.93	42
2.7.4.	Utilize the alphabet of lines.	15	9	18	2.07	42
2.7.5.	Utilize line weights, shading, and color to communicate sketch ideas.	17	11	14	1.93	42
					answered question	42
					skipped question	2

	CONTENT STANDARD 3: FUNDAMENTAL CADD SKILLS					
	Performance Standard 3.1: Basic Computer and IT Skills					
3.1.1.	Answer Options	Nice to Know	Need to Know	Critical to Know	Rating Average	Response Count
3.1.2.	Use and maintain computer hardware and input/output devices.	10	15	17	2.17	42
3.1.3.	Apply basic commands of an operating system and software.	8	13	21	2.31	42
3.1.4.	Apply file management techniques using various storage media.	5	17	20	2.36	42
3.1.5.	Import and export data files using various formats.	5	15	22	2.40	42
3.1.6.	Use industry reliable media to acquire information to complete drafting problems.	9	11	22	2.31	42
					answered question	42
					skipped question	2

	Performance Standard 3.2: Drawing Environment					
	Answer Options	Nice to Know	Need to Know	Critical to Know	Rating Average	Response Count
3.2.1.	Select appropriate existing title blocks.	6	16	20	2.33	42
3.2.2.	Set drafting settings.	4	14	24	2.48	42
3.2.3.	Determine and apply scaling factors, including plotting and printing.	4	12	26	2.52	42
3.2.4.	Assign line weights, line types, and colors.	5	12	25	2.48	42
3.2.5.	Utilize template files.	4	17	21	2.40	42
3.2.6.	Utilize sheets/layouts for plotting/printing.	4	15	23	2.45	42
					answered question	42
					skipped question	2

	Performance Standard 3.3: Geometric Shapes and Objects using Cartesian Coordinate System					
	Answer Options	Nice to Know	Need to Know	Critical to Know	Rating Average	Response Count
3.3.1.	Describe and utilize the Cartesian Coordinate System to create geometric shapes and objects (x, y, z).	7	13	22	2.36	42
3.3.2.	Calculate input coordinates.	11	12	19	2.19	42
3.3.3.	Manipulate and utilize coordinate systems.	8	13	21	2.31	42
					answered question	42
					skipped question	2

	Performance Standard 3.4: CADD Commands					
	Answer Options	Nice to Know	Need to Know	Critical to Know	Rating Average	Response Count
3.4.1.	Utilize multiple entry methods to invoke CADD commands (i.e., hot keys, icons, and menus).	8	17	16	2.20	41
3.4.2.	Utilize geometric relationships to ensure accuracy (i.e., endpoint, midpoint, and center.	4	10	27	2.56	41
3.4.3.	Utilize CADD commands to create and modify objects.	1	15	25	2.59	41
3.4.4.	Assign property styles to objects.	2	20	19	2.41	41
3.4.5.	Access and integrate help resources to solve problems.	8	14	18	2.25	40
					answered question	41
					skipped question	3

	Performance Standard 3.5: Annotations					
	Answer Options	Nice to Know	Need to Know	Critical to Know	Rating Average	Response Count
3.5.1.	Define, create, and modify industry standard text styles.	10	11	21	2.26	42
3.5.2.	Arrange text based on industry standards.	7	16	19	2.29	42
3.5.3.	Create and modify dimension styles.	8	10	24	2.38	42
3.5.4.	Arrange dimensions based on industry standards (may include dual dimensioning).	3	14	25	2.52	42
3.5.5.	Use industry standard symbols to annotate drawings.	2	14	26	2.57	42
					answered question	42
					skipped question	2

	Performance Standard 4.1: Three-Dimensional Models					
	Answer Options	Nice to Know	Need to Know	Critical to Know	Rating Average	Response Count
4.1.1	Interpret and define the right-hand rule for the x, y, and z-axes.	11	10	21	2.24	42
4.1.2	Develop three-dimensional models (i.e., wireframe, surface, solid, or parametric).	12	9	21	2.21	42
4.1.3	Manipulate the x-y plane in three-dimensional space.	12	11	19	2.17	42
4.1.4	Edit the shape and configuration of solid models.	12	10	20	2.19	42
4.1.5	Display objects as shaded or hidden lines removed.	15	9	17	2.05	41
4.1.6	Create working and presentation drawings from three-dimensional models.	9	10	23	2.33	42
					answered question	42
					skipped question	2

CONTENT STANDARD 5: ARCHITECTURAL DRAFTING AND DESIGN

	Performance Standard 5.1: Architectural Design					
	Answer Options	Nice to Know	Need to Know	Critical to Know	Rating Average	Response Count
5.1.1	Identify and describe different architectural styles.	17	10	14	1.93	41
5.1.2	Identify construction terminology, materials and building codes.	6	13	22	2.39	41
5.1.3	Identify architectural annotation standards.	7	14	20	2.32	41
5.1.4	List and describe construction drawings.	8	13	20	2.29	41
5.1.5	Prepare a floor plan from an existing plan or sketch.	2	12	27	2.61	41
					answered question	41
					skipped question	3

	Performance Standard 5.2: Architectural Views and Details Related to Design Criteria					
	Answer Options	Nice to Know	Need to Know	Critical to Know	Rating Average	Response Count
5.2.1	Apply architectural design concepts to plan views.	4	18	19	2.37	41
5.2.2	Create an exterior elevation from an existing floor plan.	4	10	27	2.56	41
5.2.3	Create interior elevations.	8	9	24	2.39	41
5.2.4	Create building sections and details.	3	11	27	2.59	41
5.2.5	Produce schedules.	8	10	23	2.37	41
5.2.6	Understand and apply green building/sustainable design principles to project design.	17	8	16	1.98	41
					answered question	41
					skipped question	3

CONTENT STANDARD 6: MECHANICAL DRAFTING AND DESIGN

Performance Standard 6.1: Drafting Concepts Related to Basic Manufacturing Processes					
Answer Options	Nice to Know	Need to Know	Critical to Know	Rating Average	Response Count
Describe the basic engineering design process.	12	12	16	2.10	40
Describe standard machine processes.	15	11	14	1.98	40
Utilize standard welding/machining symbols per ANSI and ASME.	9	12	19	2.25	40
Identify common stock forms.	12	15	13	2.03	40
Create scaled working drawings using dimensions, tolerances, and other specifications for machine tool, fabrication, and/or welding processes.	4	15	21	2.43	40
Create thread and fastener representations and utilize thread designations.	12	7	21	2.23	40
Create assembly drawings including a bill of materials.	9	10	21	2.30	40
				answered question	40
				skipped question	4

	Performance Standard 6.2: Geometric Dimensioning and Tolerancing (GDK&T) Standards					
	Answer Options	Nice to Know	Need to Know	Critical to Know	Rating Average	Response Count
6.2.1.	Understand datums utilized for tolerancing.	10	8	21	2.28	39
6.2.2.	Utilize basic dimensioning for toleranced features.	8	9	22	2.36	39
6.2.3.	Utilize GD&T for assembly fits.	13	7	19	2.15	39
					answered question	39
					skipped question	5

	Performance Standard 6.3: Drafting Concepts Related to Pattern Development					
	Answer Options	Nice to Know	Need to Know	Critical to Know	Rating Average	Response Count
6.3.1.	Define developments.	17	9	13	1.90	39
6.3.2.	Identify the major types of developments.	16	9	14	1.95	39
6.3.3.	Construct parallel line development.	16	9	14	1.95	39
					answered question	39
					skipped question	5